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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,666	04/13/2001	Massimo Brioschi	Q64029	1733
23373	7590	06/28/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			CHANG, RICHARD	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/833,666

Applicant(s)

BRIOSCHI ET AL.

Examiner

Richard Chang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 9 is/are rejected.
- 7) ☒ Claim(s) 2-3,5-8 and 10-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 02/28/2005 have been fully considered but they are not persuasive.

-- In response to applicant's argument that the cited reference does not disclose that at least digitally delaying one of two digital signals by a period that is equal to an integer multiple of a sampling period of the two digital signals as cited in claims 1 and 4 (See Applicant ' Amendment A, page 11, 2<sup>nd</sup> paragraph), the reference clearly discloses that the analog signals are digitized (sampled by the sampling period) by the A/D converter (226, 246) first into the digital domain, then passed to the 90 degree phase shifter (230,252) in the digital domain (See Fig. 1, Col. 2, lines 8-34) , i.e., the 90 degree phase shift is achieved using taps of digital delays forming proper phase shifting in digital domain.

It is the examiner's position that the limitation of "at least digitally delaying one of two digital signals by a period that is equal to an integer multiple of a sampling period of the two digital signals" as cited in claims 1 and 4 are clearly anticipated by the cited reference for the reason discussed above.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4 and 9 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by US patent No. 6,115,419 ("Meehan").

Regarding claims 1, 4 and 9, Meehan teaches an apparatus and method for improving signal reception from the multipath delay related to antenna locations (compensating for a possible delay ... paths in space diversity radio transmissions) (See Fig. 1) comprising the steps of

receiving first analog baseband signal from IF mixer (224) for the first antenna (220) path (See Fig. 1, Col 4, lines 19-22),

receiving second analog baseband signal from IF mixer (244) for the second antenna (240) path (See Fig. 1, Col 4, lines 43-45),

sampling the first analog baseband signal by an analog-to-digital converter (226) (See Fig. 1, Col 4, lines 24-25) and the second analog baseband signal by an analog-to-digital converter (246) (See Fig. 1, Col 4, lines 48-49) to obtain a first digital signal and a second digital signal, respectively, a possible delay being present between the first and the second digital signals and

sending the first digital signal to equalizer (228) (See Fig. 1, Col 4, lines 24-25) and the second digital signal to equalizer (248) (See Fig. 1, Col 4, lines 48-49) wherein said method further comprises the step of

delaying the first digital signal by passing through phase shifter (230) and a second feed-forward equalizer (232) with inherent multiple delay taps based on the sampling period (See Fig. 1, Col 4, lines 26-32) (see the reason above),

modifying the signal to create an improved signal (recovering the difference between the imposed delay and the real one) by the decision device (330), at the equalization step (300) (See Fig. 1, Col 7, lines 28-32).

#### ***Allowable Subject Matter***

4. Claims 2-3, 5-8 and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

#### ***Conclusion***

***THIS ACTION IS MADE FINAL.*** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*RKC*

rkc

Richard Chang  
Patent Examiner  
Art Unit 2663

*Ricky Ngo*  
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PRIMARY EXAMINER

*9/27/05*